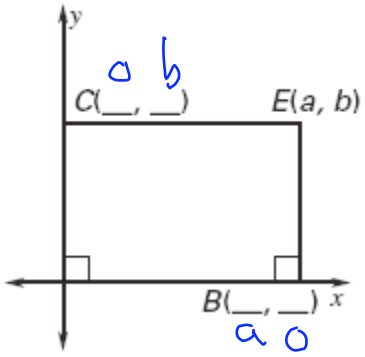
Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243–246)

1. What is your name?

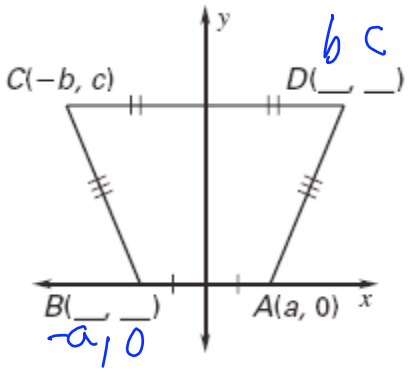
Key

Find the missing coordinates without using any new variables.

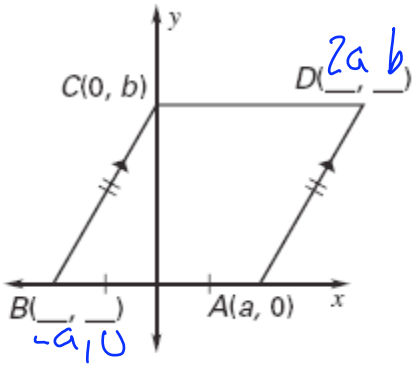
2.



3.

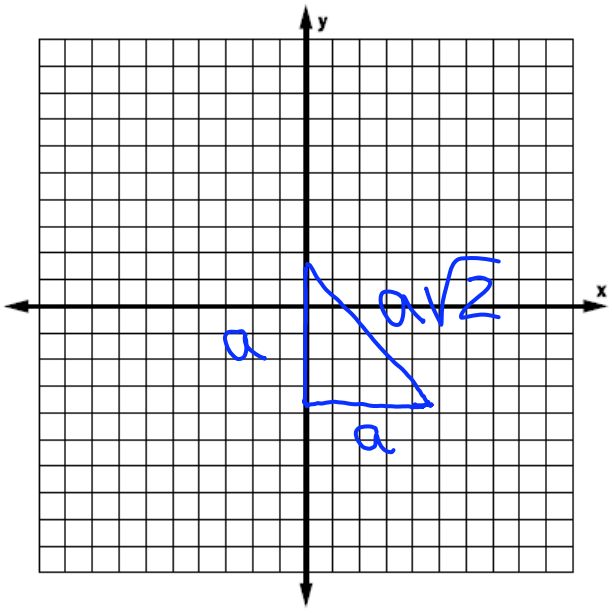


4.



Place the figure in the coordinate plane and find the given information.

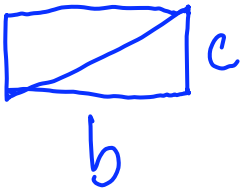
5. A right isosceles triangle with legs of a units; find the length of the hypotenuse.

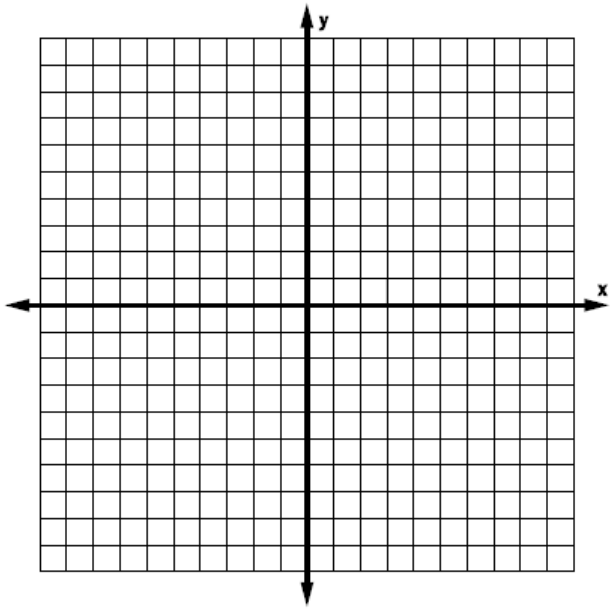


Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243-246)

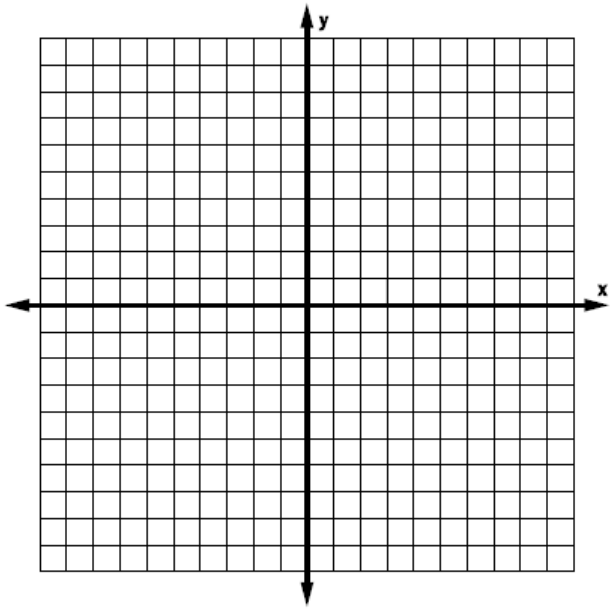
6. A rectangle with a length of b units and a width of c units; find the length of a diagonal.

diagonal = $\sqrt{b^2 + c^2}$





Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243-246)

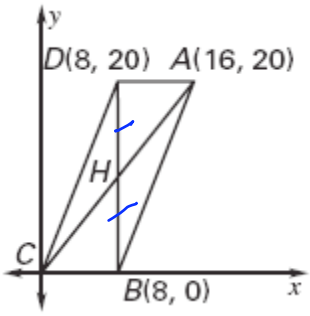


7. A square with a perimeter of 4n units; find the length of a diagonal.

$n\sqrt{2}$

Use the given information and diagram to find the coordinates of H.

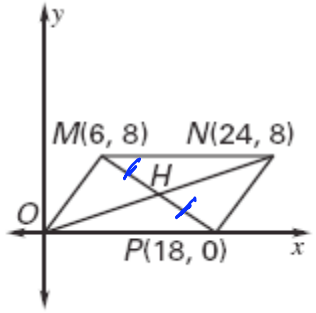
8. $\triangle ADH \cong \triangle CBH$



H (8, 10)

Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243–246)

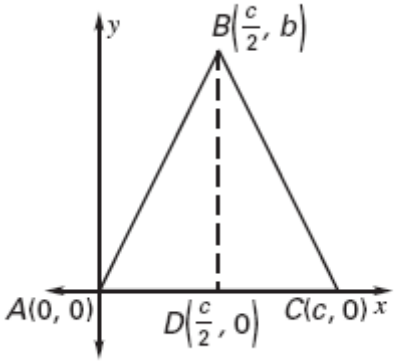
9. $\triangle MHN \cong \triangle PHO$



(12, 4)

Write a coordinate proof.

10. Prove: $\triangle ABC$ is isosceles.



$AB = \sqrt{(\frac{c}{2})^2 + b^2}$

$\sqrt{\frac{c^2}{4} + b^2}$

$BC = \sqrt{(c - \frac{c}{2})^2 + (-b)^2}$

$\sqrt{(\frac{c}{2})^2 + b^2}$

$\sqrt{\frac{c^2}{4} + b^2}$

Since $AB = BC$, $\triangle ABC$ is isosceles.

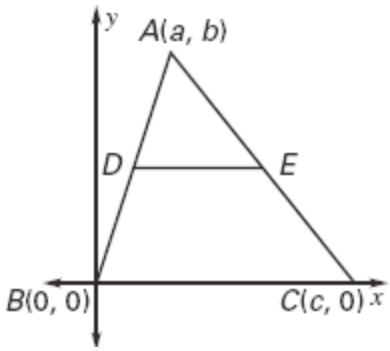
Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243-246)

11.

Given: D is the midpoint of $\overline{AB}$.

E is the midpoint of $\overline{AC}$.

Prove: $DE = \frac{1}{2}BC$



D has the coordinates $\left(\frac{a}{2}, \frac{b}{2}\right)$

E has the coordinates $\left(\frac{a+c}{2}, \frac{b}{2}\right)$

$DE = \frac{a+c}{2} - \frac{a}{2} = \frac{c}{2}$

$BC = c$

Since $\frac{c}{2}$ is $\frac{1}{2}$ of C $DE = \frac{1}{2}BC$

A

12. _____ A square with side length 4 has one vertex at (0, 2). Which of the points below could be a vertex of the square?

A. (0, -2)
B. (0, 0)
C. (2, -2)
D. (2, 2)

B

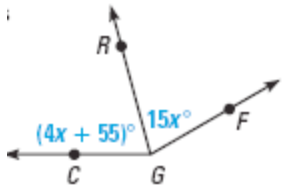
13. _____ A rectangle with side lengths 2h and k has one vertex at (-h, k). Which of the points below **could not** be a vertex of the rectangle?

A. (-h, 0)
B. (0, k)
C. (h, 0)
D. (h, k)

Geometry Date____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243-246)

Review.

In the diagram, $\overline{GR}$ bisects $\angle CGF$. (Chapter 1 Section 5)



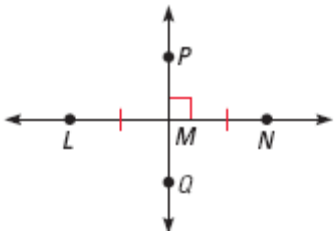
14. Find the value of x.

5

15. Find $m\angle CGF$.

150°

Use the diagram to determine whether the statement is true or false. (Chapter 1 Section 5).



16. T ____ $\overleftrightarrow{PQ} \perp \overleftrightarrow{LN}$.

17. F ____ Points L, Q, & N are collinear.

18. T ____ $\overleftrightarrow{PQ}$ bisects $\overline{LN}$.

19. T ____ $\angle LMQ$ & $\angle PMN$ are supplementary.

Let p be "two triangles are congruent" and let q be "the corresponding angles of the triangles are congruent." Write the symbolic statement in words. Decide whether the statement is true.

20. $p \circledR q$

If 2 Δ's are ≅, then the corresponding ∠'s of the Δ's are ≅.

21. $q \circledR p$

If the corresponding ∠'s of a Δ's are ≅, then the Δ's are ≅.

False.

22. $\sim p \circledR \sim q$

If 2 Δ's are not ≅, then the corresponding ∠'s are not ≅.

False.

Geometry Date_____ 4.7 Assignment
Triangles and Coordinate Proof (pp 243-246)

True.